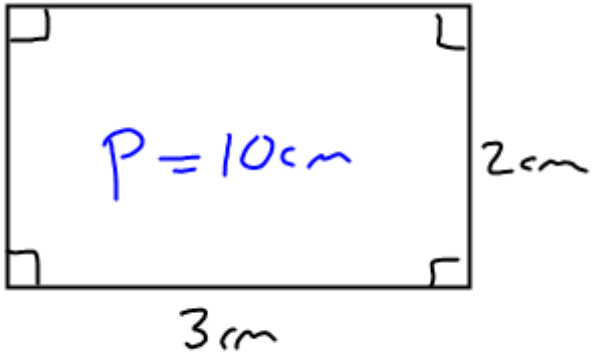
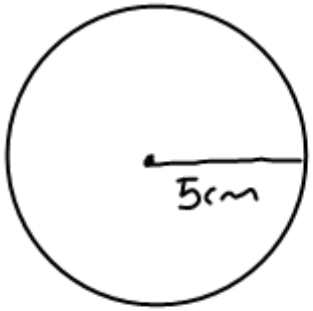
① Find the perimeter



② Find the circumference

(a)

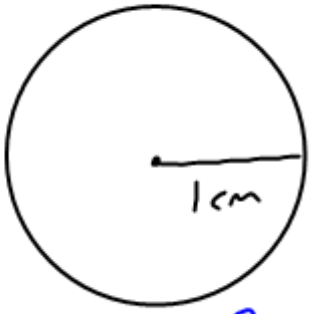


$C = 2\pi r$

2π

$C = 10\pi$, 31.4159

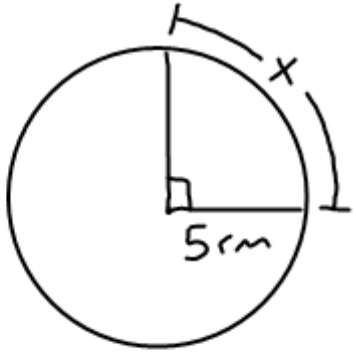
(b)



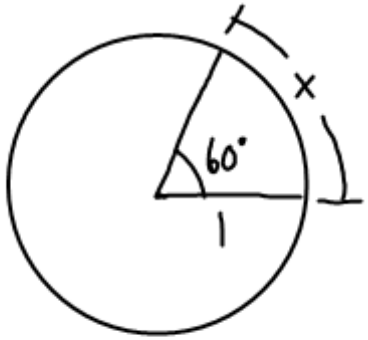
$C = 2\pi$

6.28

③ Find the length of x



$X = 7.8$



$x = 1.04, \frac{\pi}{3}$

④ Solve for x

$$\frac{x}{45} = \frac{\pi}{180}$$

$x = 0.785, \frac{\pi}{4}$

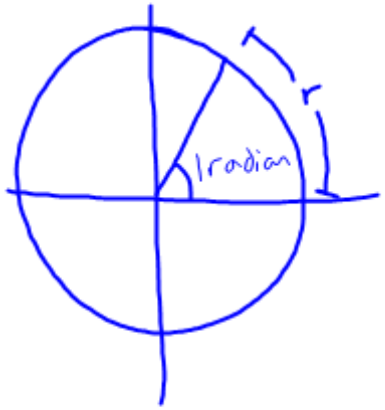
Objective

How many radii fit around your circle? – do it.

6.28 radii

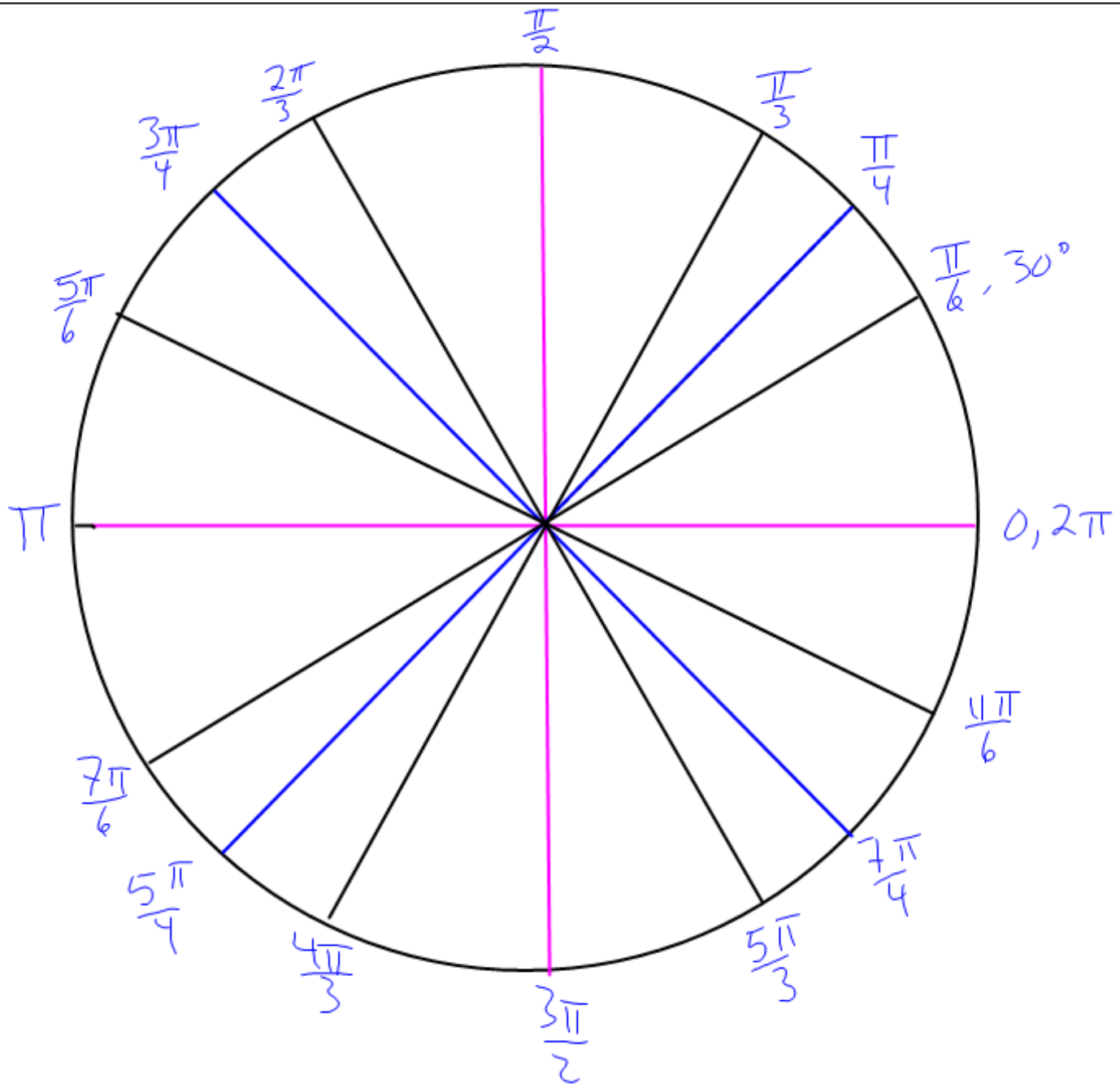
2π radii $\qquad$ 2π radians

radian = Angle that cuts off an arc length equal to one radius



$\frac{\pi}{180^\circ} = \frac{\frac{\pi}{6}}{x}$

$\frac{\frac{\pi}{6}}{\pi} = \frac{x}{180}$



Convert

radians → degrees

$$\frac{180^\circ}{\pi} = \frac{x}{\frac{\pi}{6}} \Rightarrow x\pi = 180 \cdot \frac{\pi}{6}$$

$\frac{180\pi}{6}$

$$x\pi = 30\pi$$

$$x = 30^\circ$$

degrees → radians

$$\frac{\pi}{180^\circ} = \frac{x}{30^\circ}$$

What we are converting

$$180x = 30\pi$$

$$x = \frac{30\pi}{180}$$

$$x = \frac{\pi}{6}$$

Hint put unknown on top

Sect. 3.1

#5-12(3), 21-32(3), 35-46(3) approx, 55, 56, 57-62, exact

71, 74